

What is Claimed is:

- 1        1.    A releasable retarder for resisting movement of  
2 railway cars moving along first and second running rails  
3 of a section of railway track, said releasable retarder  
4 comprising:  
5        first and second shoe beams supported adjacent to  
6 said running rails;  
7        a plurality of pairs of shoes carried by said shoe  
8 beams in a parallel, spaced relation with the first and  
9 second running rails;  
10       a bias structure biasing the shoe beams toward the  
11 running rails, trapping wheels of a railway car entering  
12 the retarder between the running rails and the shoes  
13 carried by the shoe beams and applying a frictional force  
14 to the railway car wheels for slowing or stopping the  
15 railway car; and  
16       an operating mechanism for moving the shoe beams  
17 between a home position in which the shoes are positioned  
18 to engage the railway car wheels, and a release position  
19 in which the bias force is released, allowing the railway  
20 car to move freely through the retarder.
- 1        2.    The releasable retarder of claim 1, wherein the  
2 said operating mechanism includes at least one drive  
3 mechanism and a common operating member which couples the  
4 drive mechanism to the bias structure.
- 1        3.    The releasable retarder of claim 2, wherein the  
2 drive mechanism includes a plurality of rams coupled to  
3 said common operating member.
- 1        4.    The releasable retarder of claim 3, wherein the  
2 rams are bidirectional devices, allowing the retarder to  
3 function in a service mode in which the operating  
4 mechanism moves the shoe beams outwardly, relative to the  
5 running rails, allowing the insertion of shims between  
6 the bias structure and a support structure.

1           5.    The releasable retarder of claim 2, wherein the  
2    bias structure includes a plurality of spring packs each  
3    including at least one spring.

1           6.    The releasable retarder of claim 5, wherein the  
2    drive mechanism couples the rams to the spring packs for  
3    causing the springs to be compressed, drawing the shoe  
4    beams inwardly away from the running rails to the release  
5    position.

1           7.    The releasable retarder of claim 5, wherein the  
2    spring packs are mounted to allow the springs to produce  
3    an outwardly directed force on the shoe beams.

1           8.    The releasable retarder of claim 2, wherein the  
2    operating member is supported near the centerline of the  
3    railway track section.

1           9.    The releasable retarder of claim 1, wherein the  
2    rams are bidirectional devices, allowing the retarder to  
3    function in a service mode in which the operating  
4    mechanism moves the shoe beams to a service position  
5    outwardly, allowing the insertion of shims to compensate  
6    for wear on the shoes.

1           10.   The releasable retarder of claim 5, wherein  
2    said operating mechanism includes a plurality of lever  
3    systems, and the common operating member is coupled to  
4    the spring packs through the lever systems.

1           11.   The releasable retarder of claim 1, wherein  
2    said shoes are removably mounted on said shoe beams.

3           12.   A releasable retarder for resisting movement of  
4    a railway car moving along first and second running rails  
5    of a railway track, said releasable retarder comprising:  
6           first and second shoe beams supported adjacent to  
7    said running rails;

8 a plurality of pairs of shoes carried by said shoe  
9 beams in a parallel, spaced relation with first and  
10 second running rails;

11 a plurality of springs biasing the shoe beams toward  
12 the running rails, trapping wheels of a railway car  
13 entering the retarder between the shoes carried by the  
14 shoe beams and the running rails and applying a  
15 frictional force to the railway car wheels for stopping  
16 the railway car and retaining the railway car in the  
17 retarder; and

18 an operating mechanism for moving the shoe beams  
19 between a home position in which the shoes are positioned  
20 to engage the railway car wheels, and a release position  
21 in which the spring force is released, allowing the  
22 railway car to move freely through the retarder, said  
23 operating mechanism including a plurality of rams and a  
24 common operating member which couples the rams to the  
25 spring packs, for causing the springs to be compressed,  
26 drawing the shoe beams inwardly away from the running  
27 rails to the release position.

1 13. The releasable retarder of claim 12, wherein  
2 said operating mechanism includes a plurality of lever  
3 systems, and the common operating member is coupled to  
4 the spring packs through the lever systems.

1 14. The releasable retarder of claim 12, wherein  
2 the rams are bidirectional devices, allowing the retarder  
3 to function in a service mode in which the operating  
4 mechanism moves the shoe beams to a service position,  
5 allowing the insertion of shims to compensate for wear on  
6 the shoes.

1 15. The releasable retarder of claim 12 wherein  
2 said shoes are removably mounted on said shoe beams.

1 16 A releasable retarder for resisting movement of  
2 a railway car moving along first and second running rails  
3 of a railway track, said releasable retarder comprising:

4 first and second shoe beams supported adjacent to  
5 said running rails;  
6 a plurality of pairs of shoes carried by said shoe  
7 beams in parallel, spaced relation with first and second  
8 running rails;  
9 a bias structure biasing the shoe beams toward the  
10 running rails, trapping wheels of the railway car  
11 entering the retarder between the running rails and the  
12 shoes carried by the shoe beams and applying a frictional  
13 force to the railway car wheels for stopping the railway  
14 car, retaining the railway car in the retarder; and  
15 an operating mechanism for moving the shoe beams  
16 between a home position in which the shoes are positioned  
17 to engage the railway car wheels, and a release position  
18 in which the bias force is released, allowing the railway  
19 car to move freely through the retarder, wherein the rams  
20 are bidirectional devices, allowing the retarder to  
21 function in a service mode in which the operating  
22 mechanism moves the shoe beams to a service position,  
23 allowing the insertion of shims.